

UNISIGN EXPERIENCE

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Logistics – Trains

Case study



Application

Machining bogies for rail vehicles

Material

Steel, cast steel and chrome steel

Customer

Stadler Winterthur, Switzerland

Machine type

UNIPORT7000 (3x)

UNIVERS6000 (1x)

Benefits

- Portal machine (UNIPORT7000) with high reliability
- High precision in terms of evenness and geometry
- Full-service machining of components in a single set-up (UNIVERS6000)
- Competent staff who are always ready to help

Panningen (Netherlands)
Tel. +31 (0)77 307 37 77
sales@unisign.com
www.unisign.com

Bogies machined without a hitch thanks to Unisign

About our customer

The engineering consultancy set up by Ernst Stadler in 1942 has since grown into a company with operations across the world. Today, Stadler is one of the world's biggest providers of mobility solutions in the form of rail vehicles, servicing and signalling systems. From its headquarters in Bussnang (Thurgau) in eastern Switzerland, Stadler maintains a global presence with 16 production and component factories, five engineering sites and over 80 service locations across the world.

Stadler's site in Winterthur, Switzerland, is the company's centre of excellence for the production of bogies. The site, which provides around 13,000 m² of production and warehousing space, is where bogies are produced for the full range of Stadler's standard and wide-gauge rail vehicles.

From Winterthur, the bogies are then sent to the various Stadler sites in Switzerland or abroad, where they are assembled into the type of railway vehicle required.

For 13 years now, Stadler has been making intensive use of CNC machines from Unisign. The company's range of machinery includes three UNIPORT7000 machines and one UNIVERS6000 for machining the bogies.

Not interchangeable, but complementary

"Each of the three UNIPORT7000 machines performs a range of tasks of its own," explains Stefan Wäckerlin, a specialist in CNC milling and programming at Stadler Winterthur. "Thanks to their different sizes, we are able to machine bogies both large and small."





There are many different tasks we can perform. Though the machines themselves are operated in different ways, we use the same tooling on all three machines. That also provides us with a very practical advantage: If one of the tools breaks, we can simply ‘borrow’ one from one of the other machines.”

Expanding production

Stadler Winterthur purchased its first UNIPORT7000 back in 2010. And in 2020, the company then took delivery of two additional UNIPORT7000 machines: Stefan Wäckerlin continues: “We wanted to be able to produce more components and those three machines are now in use around the clock. Production is running at full capacity and that’s definitely a good thing.” In addition to the three UNIPORT7000 machines, Stadler Winterthur has also owned a UNIVERS6000 since 2016. “To produce a bogie, you always need two

side frame members and we use our UNIVERS6000 to machine them.”

A multitude of running gear

Every day, we machine a multitude of different types of bogies on our Unisign machines. Stefan Wäckerlin continues: “These can be bogies for trams, underground trains, large trains or even mountain railways.”

Track gauge

Stefan Wäckerlin continues: “One of the main reasons we use Unisign machines is because our technicians can therefore simply screw on the components and insert the motors, gears and springs in precisely the right position. Railway tracks also come in various gauges and these can differ from one country to another. Our customers are located in a variety of countries. As the gauge of the tracks can sometimes vary, we therefore need to machine different types of bogie.”

Small runs

In most cases, small runs involve producing workpieces that are machined on the Unisign machines. As Stefan Wäckerlin explains: “A train is made up of at least two to four motorised bogies and three to seven carrier bogies. What is more, there is also a pair of connector bogies. And the number of all these bogies differs. Sometimes,

there’s only one, but in some cases there could be two or even three. We are always on the lookout for new solutions. Very large production runs are required only rarely.”

Reliable, robust and precise

For Stadler Winterthur, using the UNIPORT-7000 machines has resulted in a significant increase in the precision of the axle guides as far as evenness and geometry are concerned. The UNIVERS6000 too has also been highly beneficial to the company. It can be used to machine entire components in a single set-up.

Stefan Wäckerlin is clearly content: “Unisign delivers extremely reliable milling machines and we certainly enjoy working with them. They are well-built and, when used in production, are largely fault-free. It makes me happy to have the chance to operate a machine as robust and as precise as this.”

The right people

Stefan Wäckerlin is also full of praise for the workforce at Unisign: “Those people are the most important ones of all. If I ever call Unisign or get in touch via e-mail, the right person is always on hand to give me help and advice.”

